

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
12 September 2003 (12.09.2003)

PCT

(10) International Publication Number
WO 2003/074731 A3

(51) International Patent Classification⁷: C12Q 1/68, C07K 17/00, 14/02, G01N 27/26, B01J 19/00

(21) International Application Number:
PCT/GB2003/000613

(22) International Filing Date: 11 February 2003 (11.02.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0205455.9 7 March 2002 (07.03.2002) GB

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(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
8 January 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2003/074731 A3

(54) Title: NUCLEIC ACID PROBES, THEIR SYNTHESIS AND USE

(57) Abstract: The invention provides a method of probing for a nucleic acid comprising: contacting a nucleic acid solution with an oligonucleotide probe labelled with an electrochemically active marker, providing conditions at which the probe is able to at least partially hybridise with any complementary target sequence which may be present in the nucleic acid solution, selectively degrading either hybridised, partially hybridised or unhybridised nucleic acid probe, and electrochemically determining information relating to the electrochemically active marker. The invention further provides novel molecules with use in methods of the invention.

INTERNATIONAL SEARCH REPORT

Int. Application No.

PCT/GB 03/00613

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12Q1/68 C07K17/00 C07K14/02 G01N27/26 B01J19/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12Q C07K G01N B01J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS, WPI Data, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	UMEK ET AL: "Electronic detection of nucleic acids" JOURNAL OF MOLECULAR DIAGNOSTICS, vol. 3, no. 2, May 2001 (2001-05), pages 74-84, XP002260324 * See page 75 (figure 1) *	1-74, 91, 92
Y	YU ET AL: "Electronic detection of single-base mismatches in DNA with ferrocene-modified probes" JOURNAL OF THE AMERICAN CHEMICAL SOCIETY, vol. 123, 2001, pages 11155-11161, XP002260325 * See pages 11155-11158 (Figures & Schemes) *	1-74, 91, 92

 Further documents are listed in the continuation of box C. Patent family members are listed in annex.

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Date of the actual completion of the international search

5 November 2003

Date of mailing of the international search report

17/11/2003

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INTERNATIONAL SEARCH REPORT

In Application No
PCT/GB 03/00613

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	<p>IHARA ET AL: "Ferrocene-oligonucleotide conjugates for electrochemical probing of DNA" <i>NUCLEIC ACIDS RESEARCH</i>, vol. 24, no. 21, - 1996 pages 4273-4280, XP002260326 * See page 4274 (left column), page 4275 (Scheme 1), and pages 4279-4280 (Conclusions) *</p> <p>-----</p>	1-74, 91, 92
Y	<p>BEILSTEIN ET AL: "Synthesis and characterization of ferrocene-labeled oligodeoxynucleotides" <i>JOURNAL OF ORGANOMETALLIC CHEMISTRY</i>, vol. 637-639, 3 December 2001 (2001-12-03), pages 398-406, XP004323925 ISSN: 0022-328X * See page 398 (Introduction) and pages 401-405 (Schemes and Conclusion) *</p> <p>-----</p>	1-74, 91, 92